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American Journal of Pharmacy

AND THE SCIENCES
SUPPORTING PUBLIC HEALTH

MANILA COLLEGE OF PHARMACY
(See Article on Philippine Pharmacy, Page 380)

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AND THE SCIENCES SUPPORTING PUBLIC HEALTH

Since 1825

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CONTENTS

PAGE

Editorials:

Science—A Gift or a Curse 376

The Clarity of Ampul Solutions 378

Articles:

The Profession of Pharmacy in the Philippines. By H. L. Flack 380

Hydrophilic Ointment. By L. C. Zopf 396

House Organs as Important Sources of Information. By K. Avis 400

Reprinted Article:

A Note on the Placebo. By O. H. Perry Pepper 409

Selected Abstracts 413

EDITORIALS

SCIENCE—A GIFT OR A CURSE

THE editor of a professional or a scientific journal is expected by most of his readers to adhere strictly to matters that are concerned with his respective field. There are, however, occasional issues of such immense importance that, for one who is keenly interested in the world's progress, it becomes impossible to write on any one of the relatively minor matters that might be presented. This is such an occasion.

The world today is in the most chaotic and disturbed state in human history. Nowhere can man go without being beset by social, political and international problems of an almost baffling perplexity. One reads every day of continuing wars, although the war is presumed to be over; of international friction; of ideologic clashes; of imperialism vs. a free world; of labor vs. capital; of the control of atomic energy; and so on *ad infinitum*. Will man ever again be free to enjoy a calm and peaceful existence in any refuge other than heaven or the timeless void of oblivion?

We in the medical sciences feel the impact of this disturbance in many ways—the growing importance of psychosomatic medicine, the tremendous increase in the demand for sedative drugs on the one hand and powerful cerebral stimulants on the other, the increased incidence of conditions resulting from the anxiety state and other conditions due to a life not in accordance with nature's intent for man's environmental factors.

From the scientific viewpoint the world has made tremendous progress in all of the natural and physical sciences. In many respects man, with his implements of modern science, can outdo nature itself. We even hear of the ultimate in which man may even, with atomic energy, set in motion a chain of events that will totally destroy the world and all in it.

Scientific and technological developments have indeed changed the whole course of our lives and few of us indeed would wish to live without the many comforts and refinements that are ours through

science. And yet what is wrong with the world that conditions seem to grow worse rather than better?

There are many factors which are probably responsible for world conditions today. One of those most frequently cited, and rightly so, is the disparity between man's scientific and social progress. Science, by giving man more leisure time, by shortening distances, and by improving communications, has made it more and more important for man to understand and tolerate his fellowman; but does he? Science, furthermore, with its explanation of natural phenomena has caused millions the world over to eliminate religion from their daily lives and with it all morals and ethics, since there is no other substitute offered by science for morality based on religious principles.

Is it any wonder that the world is rocked with trouble? Can we expect other than nationalism, racial prejudice and intolerance when self-interest is today the primary influence guiding men's lives? Governments are but groups of people and is it therefore any wonder that we learn of the likelihood of failure with the United Nations organization, of the meaningless Atlantic Charter, the resumption of imperialism, the dismal failure of the labor-management conference and all the other evidences of selfishness?

Can we object to Russia's self-interest when we as Americans refuse to lower, even slightly, our standard of living so that millions overseas may escape starvation? Does not self-interest, even within our own country, organize into pressure groups and lobbyists who sway Congress this way and that to enact legislation for special benefits? Even those who loudly proclaim that they are for the "common man" are frequently insincere and are motivated by a forthcoming election. Few indeed are those who will stand for their honest convictions in the face of overwhelming opposition. Yet it was such men who made this country great.

All those efforts today to strengthen our bonds of society by law and international agreement are doomed to failure unless there is also a rebirth of integrity and understanding among the people themselves. Morality cannot be achieved through legislation and to try to do so is like putting a new roof on a house to strengthen its foundations. The legislative farce known as the eighteenth amendment proved that no law, not in accord with the sentiments of the people, can accomplish its purpose.

For many years the Church gave to man a moral code that served as his guide but for a number of reasons this influence is not as potent as it should be. The Church seems to be too much divided in its efforts and too much concerned with organization than in its fundamental purpose even to hope to succeed in its colossal task. In many countries the state has become an object of veneration but state worship is but self-worship and it places the will of the government in the position of transcending what is basically right and wrong. So far no satisfactory substitute for religion, suitable for the great masses of the people, has been devised and yet unless there is a rebirth of individual morality and personal responsibility man will continue his downward path until even more terrible wars bring an end to all his troubles and civilization as well.

It is high time that men of science give these social problems more of their attention since if the present trend goes unchecked, scientists instead of being respected for their achievements will be hated as the inventors of those engines of suffering and death turned loose on a defenseless world.

L. F. Tice.

CLARITY OF AMPUL SOLUTIONS

SEVERAL months ago in an editorial titled "Pharmacopœia or Government" the editor criticized the efforts of one of our pharmaceutical firms to have the standard for clarity of ampul solutions in the U. S. P. XII revised. The method of approach was at that time considered particularly objectionable since it took the form of a publicity release in which the standard was described as meaningless and a statement made to the effect that if any standard existed it was that of the Food and Drug Administration and not that of the Pharmacopœia.

Since this editorial was written a number of events have occurred which have changed the complexion of this whole matter as follows: The Revision Committee Chairman, in a letter to the Company in question, in effect apologized for the editorial written in defense of the Pharmacopœia. The President of the company wrote to this editor a full letter of explanation pointing out that since other

efforts had failed this means was adopted of laying the question before the country in the hope of forcing the Pharmacopœia to reconsider this standard. Finally, a change in the wording of the standard has been proposed by the Revision Committee which it is felt will eliminate the difficulty arising from the original wording in the U. S. P. XII.

In the light of these unusual events, certain conclusions seem justified. Since the U. S. P. XII has been in force now for over three years, any objectionable feature such as the wording of the standard for clarity should not have required three years for correction. We are forced to conclude that correction was in order since it is now agreed upon by the Revision Committee and the new wording is proposed. The efforts, therefore, taken to accomplish this change must have been justified since it is inconceivable that pressure alone could have accomplished this end were change not in order.

If the editor several months ago had realized all these now obvious facts he might have lent support to those efforts to change the standard rather than have placed himself in the anomalous position of defending a group that apparently either resented his defense or felt that the outspoken criticism of their performance was in part, at least, justified.

L. F. Tice.

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THE PROFESSION OF PHARMACY IN THE PHILIPPINES

By H. L. Flack *

MY first view of a Filipino pharmacy was from a troop train moving from the North Harbor area, where my company had debarked from landing craft, to the provinces of Luzon. We were proceeding slowly down a main street when I saw a sign over a store window with the word "Botica" painted on it. I could see the window display, behind which were rows of ornamental containers such as are used for tinctures, fluidextracts, and miscellaneous liquids. The window display consisted of bins of native herbs and botanicals. It is interesting to note here that most shops in Manila have open fronts, with no windows. At the end of a business day, large shutters are set in place so as to close off the front of the store. These shutters, when formed together, usually spell out the name of the store. This pharmacy looked as though it had been brought from the states in the 1800's and had not been remodeled since. I later found that its design and interior decoration was characteristic of many Filipino pharmacies.

Typical Pharmacies

About one-half of the pharmacies that I visited used dispensing bottles as their interior wall decoration. The others had display shelves with patent medicines of all varieties on them. Of course each store had a private prescription department. The difference in type of store was chiefly that some stores just filled prescriptions and consequently used their dispensing bottles as a display. Similarly, many purely professional stores in the states use this type of interior decoration. It is of interest to note that the names of the preparations on display were in Spanish. The other type of store was typical of small pharmacies in the states that could not exist on income from prescriptions alone, and of necessity added patent medicines.

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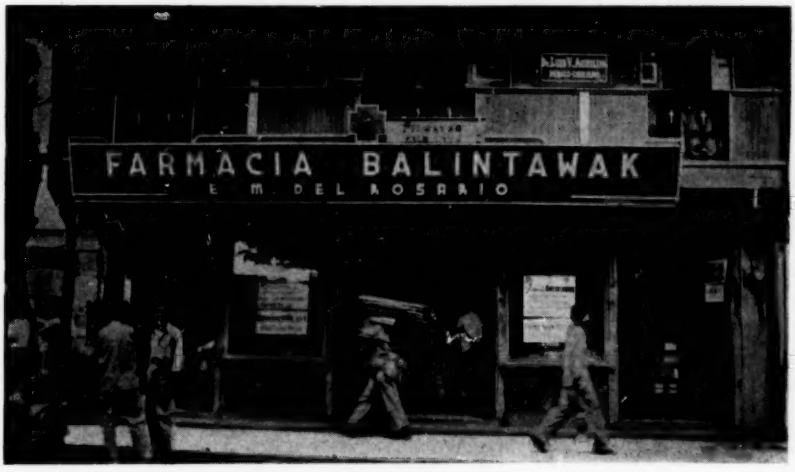
* *Editor's Note:* The author, H. L. Flack, is at present with the Army of Occupation in Japan. He was prior to his induction in the Army a pharmacist at the New York Hospital, where he concluded a two year post-graduate internship in Hospital Pharmacy, under D. A. Clarke.

Many of these proprietaries are from the large manufacturing companies in the states.

Though some stores have window displays of purely professional matter, others have an open front. These stores close at the end of a day either by drawing a screen across the open front or by placing a series of boards across the open front to form a closure.

Most stores are the size of a typical neighborhood pharmacy in the states. There are a few, however, that are as large as a modern chain store. Another few stores, copying a trend from the states,



A PHARMACY IN MANILA

serve lunches and ice cream and one store even served liquors and mixed drinks along with everything else. I was told by a pharmacist that two stores (Universal Drug Store and Botica Boie), in prewar days, actually had a soda fountain and booths as part of their armamentarium.

It would be of interest to note the close relationship of doctor and pharmacist. Almost every pharmacy has either a physician's office above it or has a physician present as an integral part of the pharmacy. One pharmacy had three physicians present prior to the Japanese occupation. The physician has an office in the pharmacy and gives his prescriptions to the pharmacist to fill. Thus there exists a very close relationship between pharmacist and physician.

A typical salary before the war was from sixty to one hundred pesos per *month*. Now salaries range from eighty to one hundred fifty pesos per month for a forty-eight hour week (one dollar is equivalent to two pesos).

Prescription Practice

Before the war, the average Filipino neighborhood pharmacy filled twenty to forty prescriptions daily, though the larger stores down town filled one hundred and fifty to two hundred prescriptions daily. At that time, the average cost of a prescription was one or two pesos in the city and eighty centavos to one and one-half pesos in the provinces (suburbs) (five cents is the equivalent of ten centavos).

During the Jap occupation, many stores closed or were bombed out of business and thus it is hard to find an average number of prescriptions filled during that time. However the price of a prescription (in pesos) was ten times or more the pre-war price. This was due not only to the scarcity of materials but also to the so-called "Mickey Mouse" or occupation currency with which the Japs flooded the islands.

After the American liberation of Manila, the pharmacies opened their doors to the public and began the task of reconversion to normal ways of life. The currency was still to be stabilized, which the United States Government is doing by paying GI's in Philippine pesos at the rate of two pesos for one dollar of pay.

At present, in August, the neighborhood stores fill an average of ten to twenty prescriptions daily while the few large stores fill between fifty and seventy-five prescriptions per day. This decrease in number of prescriptions filled from the pre-war number is due to the high cost of living and to the scarcity of physicians. The present cost of a prescription is between four and eight pesos. This is attributed to the scarcity of materials and again to the high cost of living. Even at present, despite Army distribution of chemicals and medicinals, there are many scarce items, and numerous prescriptions cannot be filled due to shortage of ingredients.

Armamentarium

The present armamentarium of pharmacies consists of U. S. P. X or XI, N. F. V or VI, a Remington's Practice of Pharmacy or Arny's Principles of Pharmacy, U. S. Dispensatory, or a Doujardin Formulary. The Doujardin is printed in Spanish and published in

Madrid, the latest copy I saw being dated 1941. It contains a listing of drugs plus a grouping of pharmaceuticals according to their pharmacological action and use. A brief summary of the pharmacology of the medicinal substances, toxicology and dosage is given in the monograph of each substance. Many pharmacists considered the Doujardin as their most important reference book. Some few stores have only an Arny's or Remington's or Doujardin salvaged from the ruins of war.

No new books or pharmaceutical literature have been available since the Jap occupation in 1941. I had some recent copies of the American Journal of Pharmacy and the American Professional Pharmacist in my duffel bag and distributed them to the pharmacists with whom I had the pleasure of conversing. I can assure you that these journals were a most welcome gift, the only fault being that I could give only one copy of each journal to each pharmacist.

Almost all pharmacies have a two pan equal arm balance while some few have a torsion balance plus either hand scales or an unequal arm balance for heavier objects. Graduates and other pharmaceutical implements are readily available, many of them made in Japan.

Several manufacturing pharmacies "detailed" their physicians with pamphlets regarding the professional items that they manufactured.

Manufacturing Pharmacies

Before the war, many pharmacies produced their own proprietaries. In several stores, they made all ampular preparations that their clientele used with the exception of preparations that required bioassay. Almost every store had at least one preparation or more than it had manufactured and packaged in its laboratories. A pre-war listing of manufacturing pharmacies and their products listed the following [1]:

Farmacia de Manuel Zamora: Tiki-tiki for beri-beri; Vino Estimulante, a nutritive tonic; Extracto de Lomboye, for diabetes.

Arambulo's preparations "Botica Insular": Metronina, for anemia and a blood tonic; Analgina, for rheumatism, neuralgia, headache; Hemaltona, a hematic alterative and tonic restorative.

Botica Boie's products: Dolor Quita, a pain reliever; Emulsion Boie, a revitalizing tonic; Ojokol, an eye lotion.

This is only a partial listing of the proprietaries that were being manufactured in pharmacies before the war.

One pharmacy was originally called the Rexall Pure Drug Laboratories, until a close similarity was noted between that name and the name of a corporation in the states. It was then changed to Lexal Pure Drug Laboratories. Before the war, there were three pharmacists, one chemist, and three physicians on the staff of this store. They manufactured a complete line of ampular preparations with the exception of those requiring a bioassay. There were also many patent medicines produced in this pharmacy. During the Jap occupation, the Lexal Pure Drug Laboratories continued to manufacture ampular preparations, using pre-war state-side stocks of empty glass ampuls and certain of the better grade of Jap-made ampuls.

In August, this pharmacy was still unable to produce ampular preparations because there was no gas or electricity available to it. Those two items are available only to military and hospital installations in Manila. This store plans on immediate resumption of ampul manufacture when gas and electricity are again available. Meanwhile, this store still has certain stocks of ampuls made during the Jap occupation and is using them. A communication in October, however, told of the resumption of manufacture of ampuls and galenical preparations.

Chinese Drug Store

My last night in Manila, I was privileged to attend a symphony concert held at a theatre in the Chinatown of Manila. I arrived there early and to pass time I walked around a few blocks. I passed a store called "Chinese Drug Store." Looking in through the open front, I saw jars of crude drugs. I went inside and asked for the pharmacist. I speak very, very poor Chinese and Tagalog and thus could not get much information from the occupants of the store.

On further investigation, I found that as early as 1901, there was already an outstanding number of Chinese in the Philippines, bringing with them their religion, customs and idiosyncracies. They very seldom use continental medicines. The Chinese community was using and still uses their drugs and herbs for cure of their ailments. In the enactment of the pharmacy laws, the government has taken into consideration this circumstance, and included in the law the supervision of the sale and distribution of Chinese drugs and herbs. Thus the Chinese drug store that can open to the Chinese public is run by a Chinese druggist, and is duly licensed by law.

This law is still in force and is one of the peculiarities of the profession in the Islands.

Japanese Occupation

When the Japanese first occupied Manila in 1941, they confiscated all pharmaceuticals from wholesalers and stocks of oils and vaseline from every pharmacy. Botica Boie, at that time the largest wholesaler in Manila, was made the headquarters for Jap distribution of drugs. Though many pharmacists were among the casualties of war, and others took off for the hills (provinces), there were some left to carry on the profession. Many of these were former Japanese and Chinese pharmacists, with few Filipinos remaining.

A Philippine Drug and Medical Association was organized with a Jap as president, a Filipino as vice-president, and all other officers Japanese. One source claimed the name of this organization to be Manila Drug and Medicine Retailers Association, Inc. Every store that wished to remain in operation had to belong to this Association. Stores purchased shares in this association at one hundred pesos per share. The number of shares of stock purchased determined the class of a store and also the size of the monthly allotments of drugs that a store could purchase. At the end of each year, the PDMA gave out a dividend. One year it was 7.77 pesos per share and the other years it was negligible.

The first few months after the PDMA was formed, it very liberally included confiscated American proprietaries in its monthly allotments of drugs. This was a "come-on" for all stores, but did not last long. As soon as available stocks of American drugs were depleted, the PDMA members found themselves forced to purchase Jap proprietaries.

The first drugs introduced by the Japs were original packages from Japan. The names, ingredients and directions were in Japanese characters. Filipinos were at a loss as to what the drugs were for, but the few Chinese pharmacists and their customers were able to make some sense out of the Jap characters. There was very little demand for these Jap articles and the PDMA members complained.

This led to an extra label being pasted on the original container. This label had the name of the preparation and directions for use in Tagalog. It was hoped to increase the sale of Japanese medicines by this procedure, but it did not add materially to their success.

Finally the Japs began printing the name, ingredients and uses of their proprietaries in English on the label of the container. A few of these preparations are listed below. "Haliva" was manufactured by M. Tanake & Co., Ltd., Tokyo. One pearl represents 5,000 International Units of vitamin A and 700 International Units of vitamin D, equivalent to one teaspoonful of good Cod Liver Oil. Natural vitamin A and D adjusted with fish liver oils. Another product was "Trianon," manufactured in Osaka. This was 2-*p*-aminobenzenesulfonamide pyridine. Another was "Riken Vitas," manufactured by The Institute of Physical and Chemical Research in Tokyo. This product was vitamin B2 Complex, each tablet containing 0.3 milligram of B Complex (B_1, B_2, B_6), isolated from liver and rice polishings.

One particular proprietary was of interest to me. It was called "Kaol." A translation of the directions from the label (printed in Tagalog) is as follows: (1) For any sickness that spreads take four or five pills, put in mouth and drink with water; (2) If you have no appetite, take thirty pills in one dose; (3) If you have intestinal trouble, for adults one hundred pills at one time, take two or three for small children; (4) For bad breath, take two or three pills at one dose; (5) For poor appetite, for children lower than fifteen, five pills; for children higher than fifteen, one-third more dose; for children lower than five, one-fifth dose. (Note: This is an exact translation of the Jap-written Tagalog on the label. The pharmacist who made the translation laughed with me, and said the bad grammar and the "cure-all" directions were typical of most Japanese proprietaries that he had seen.) Incidentally this drug is the same as "Sen-Sen."

The Japanese did distribute some few good proprietaries, one of which was "Wakamoto," the ingredient being vitamin B Complex. Even now, customers ask for this product. The Japs also distributed quinine to the pharmacies.

During the Jap occupation, prices of everything skyrocketed. Empty capsules sold for from one peso upward, depending on the size of the capsule. Sulfathiazole tablets, one-half gram, sold for one hundred and thirty pesos. A cocoanut was worth six hundred pesos, while a fresh egg sold for one hundred pesos. Salaries for pharmacists went from sixty pesos per month before the war to about eight hundred pesos per month during the Jap occupation.

Price Regulations

After the American liberation of Manila, the Army began distributing medical supplies through the Botica Boie, which was before the war the largest wholesaler in Manila. These were chiefly in the form of essential items with no preference for manufacturer. The medicines that were sold over the counter were sold at cost price. Of course, a charge had to be made for the container and this was usually ten centavos above the government controlled cost price.

The following is a listing of medicines available at government controlled prices, with the maximum amounts that may be purchased at one time (copied from a counter display sign at Farmacia Balintawak):

	Pesos (per)	*Quantity*
Aspirin Tablets	.05	3 tablets
Atabrine Tablets	.10	3 tablets
Atropine Sulfate H. T.	.25	1 tube
Bandage Gauze 4 x 10	.43	1 package
Bismuth Subsalicylate in Oil, Squibb	8.00	1 jar
Crystoids Anthelmintic, S. & D.	1.40	1 vial
Chloroform for Anesthesia	.50	¼ pound
Domoboro Tablets	.10	3 tablets
Ether for Anesthesia, ¼ pound Squibb	.60	1 can
Ether for Anesthesia, ¼ pound Mallinckrodt	.60	1 can
Fuadin Ampuls, Winthrop	5.80	1 box
Ferrous Sulfate Tablets	.05	3 tablets
Calomel Tablets	.05	3 tablets
Mercupurin Ampuls	6.00	1 box
Neoarsphenamine 0.6 Gram	6.75	1 box
Pentothal Ampuls	2.20	1 box
Phenodiazine Powder	4.95	1 bottle
Phenobarbital Tablets (No prescription needed)	.05	3 tablets
Sulfathiazole Tablets	.05	2 tablets
Sulfur Ointment	.10	10 grams
Sulfadiazine Tablets	.20	3 tablets
Sodium Sulfadiazine Ampuls	1.50	1 ampul
Sodium Chloride	1.20	1 pound
Strophanthin H. T.	.40	———
Totaquin Tablets	.10	3 tablets
Cotton, Rolls	1.85	1 pound

Educational Standards

Since 1930, the government has required colleges of pharmacy to operate on a four year program and to award a B. Sc. in Pharmacy at the termination of those four years of study. In Manila, there were six institutions giving instruction in pharmacy, namely: Manila College of Pharmacy; University of the Philippines, School of Pharmacy; University of Santo Tomas, Faculty of Pharmacy; Philippine Women's, College of Pharmacy; Centro Escolar University, College of Pharmacy; and National University, College of Pharmacy. At the time of writing this article, only three institutions had reopened since the American liberation. These were: Manila College of Pharmacy; University of the Philippines, School of Pharmacy; and Centro Escolar University, College of Pharmacy.

The pre-war tuition costs at, for example, Centro Escolar University, were sixty pesos per semester during the first and second years, and eighty pesos per semester during the third and fourth years. This does not include laboratory fees of twenty pesos per year nor does it cover the cost of texts and incidentals. The college year at Centro Escolar was nine months per year, six days per week, and classes were held from 8 to 12 A. M. and 1 to 5 P. M.

Present tuition costs average about three hundred and fifty pesos for a nine months' college year. Male students make up about ten per cent of the total enrollment.

Tuition charges at the University of Santo Tomas for the year 1941-42 were eighty pesos per semester for a two semester college year, plus laboratory fees and books. The curriculum in Pharmacy for the four years included the following subjects:

First Year	Second Year
English	Pharmacophitilogy and Pharmacozoology (9 hours per week)
Botany (10 hours per week)	Qualitative Chemistry (7 hours per week)
Chemistry, General and Inorganic (9 hours per week)	Quantitative Chemistry (9 hours per week)
Physics (5 hours per week)	Physiology (5 hours per week)
Pharmaceutical Arithmetic	Bacteriology (9 hours per week)
Mathematics	Botany (9 hours per week)
Zoology (9 hours per week)	Parasitology (4 hours per week)
Religion	Religion
Military Science	Military Science

THIRD YEAR

Spanish
Inorganic and Organic Pharmaceutical Preparations (8 hours per week)
Organic Chemistry (9 hours per week)
Hygiene and Clinical Microscopy (9 hours per week)
Pharmaceutical Legislation
Biochemistry (10 hours per week)
Religion

FOURTH YEAR

Pharmaceutical Latin
Toxicology (7 hours per week)
Pharmacodynamics (6 hours per week)
Galenical Preparations (9 hours per week)
Pharmacopœial Testing and Assaying (5 hours per week)
Plant Chemistry (6 hours per week)
Filling of Prescriptions and Incompatibilities (9 hours per week)
Pharmaceutical Assaying (5 hours per week)
Seminar in Pharmacy and Pharmaceutical Chemistry
Commercial Pharmacy

Classes were held nine months a year, five days a week, in addition to one or two days a week being spent in practice in a retail pharmacy. During the four years of attendance at college, the student is required to spend one thousand hours of practice in a retail pharmacy. Each January and July the student must submit a roster of hours of practice and a list of prescriptions filled, with a short paragraph on the compounding of each prescription.

The State Board requires the applicant to register as an Apprentice in Pharmacy for three years prior to taking the examination. During this period the student must work a minimum of three hours daily in a pharmacy where prescriptions are dispensed.

Through the courtesy of two second-year students at Manila College of Pharmacy, Gameliel Gonzalez and Apolonio Chaves, Jr., I had the privilege of attending a class in Pharmaceutical Chemistry, conducted at that institution by Dr. Apolonio Chaves, Sr. To my surprise I found that I was guest speaker for the class. Unaccustomed as I was, etc., . . ., I did try to present a picture of professional pharmaceutical activities in the states. During a discussion that followed, I found much interest in reciprocity laws in the states with reference to the Philippine Islands. It seems the class as a whole would like to go to the states for a few years either to do postgraduate work or else to observe the newer technics of pharmaceutical

practice. Pharmaceutical institutions in the United States might greatly benefit their profession by establishing scholarships or foundations for research by interested Filipinos.

Board of Pharmaceutical Examiners and Inspectors

This Board was organized and embodied in the Administrative Code of 1917. The members must at the time of appointment be "registered first-class pharmacists in good standing, with five consecutive years of practical experience in compounding and dispensing physicians' prescriptions. They shall not be a member of the faculty of any school, college or university where any breach of pharmacy is taught nor hold any pecuniary interest in such institutions." [1]

Some of the Laws and Regulations governing the practice of Pharmacy provide for the following requirements:

1. A sufficient room for the public.

2. A place serving as pharmaceutical laboratory having all the requirements including the filling of medical prescriptions.

3. A suitable place wherein to keep drugs and biological products and medicinal substances that must be kept away from the light.

4. A place for testing and washing of bottles.

5. A suitable locker for poisons, abortives and contraconceptive substances and another space for opium and derivatives.

6. Books for the use of Pharmacy: One U. S. Pharmacopœia latest edition and other pharmacopœias and formularies. Laws and regulations governing Pharmacy in the Philippines. Record books used for prescriptions, opium, poison, etc.

7. One scale for prescriptions of one milligram sensitivity; one set of weights; graduated glasses from 5 cc. upward; one set of china glass mortars, glass funnels, glass rods, percolators, strainers and other utensils for the preparation of drugs.

8. A forty-eight hour work week, eight hours per day, six days per week.

History of Pharmacy [1]

The Faculty of Pharmacy of the University of Santo Tomas was established in 1871. It was the first attempt at pharmaceutical education in the Philippines. During the Spanish regime, the course

in pharmacy comprised five years, based upon a year of preparatory work. Prior to 1931-32, the course consisted of only three years but was changed to a four year course (in force since 1930-31), leading to the degree of Bachelor of Science in Pharmacy. Two post-graduate courses of one year each, leading to the Master's degree and the Doctor's degree in Pharmacy are offered.[2]

The first pharmaceutical journal, "Revista Farmaceutica de Filipinas," was published in January, 1893. It was published monthly, but was discontinued after its eleventh volume.

Other journals were introduced during the period of the Spanish rule, but with short-lived success. During the Philippine Revolution, pharmacy had its critical period, but came through with renewed vigor in the form of closer cooperation between pharmacist and physician.

The Colegio Medico-Farmaceutico de Filipinas was founded in 1899. The Board of Directors was composed of: a president (physician or pharmacist); two vice-presidents (a physician and a pharmacist); a treasurer, secretary and three members.

This scientific fraternity was organized with the purpose of defending the interests of both professional classes, to regulate professional fees in doubtful cases, to have a say about the registration and taxes imposed upon the members of the professions, to intervene in questions of professional ethics, to obtain from the authorities concerned these privileges as deserved by the medical and pharmaceutical interests, to re-establish the teachings of both professions, to constitute later an association of mutual help and to create an academy. The official organ of the Association is the "Revista Filipina de Medicina y Farmacia," which began publication in July, 1910.

The Manila College of Pharmacy was organized in 1904. It was the first institution of learning that gave to Filipino women the opportunity to take up a professional career. The first women pharmacists graduated in 1908.

In 1911, the University of the Philippines opened a School of Pharmacy under the control of the College of Liberal Arts. It adopted a curriculum patterned largely after the courses offered by some of the leading universities in the United States, with some modifications and additions that were found necessary to conform with local conditions. Its purpose was to give the students the

theoretical and practical knowledge which would best fit them for the practice of pharmacy in the Philippines.

In 1916 it became the School of Pharmacy under the College of Medicine. Also, in 1914, the management of the Department of Pharmacy of the Philippine General Hospital was transferred to the School of Pharmacy; thus it started to expand.

In 1918, Pharmacy took a gradual progressive movement due to the importation of drugs and pharmaceutical necessities at much lower prices. Pharmacies increased in numbers, which gave impetus for the establishment of other pharmacy colleges. In Manila alone, there were 229 pharmacies registered in 1932, plus another third not on government records, which is estimated at about 300 in all. There were also more than 1,000 pharmacies in other provinces of the archipelago.

The Centro Escolar University College of Pharmacy was founded in 1921. The National University College of Pharmacy opened in 1922. The Philippine Women's College of Pharmacy was established in 1926.

In 1920, the Philippine Pharmaceutical Association was incorporated. Its purposes were: early publication of a Philippine Pharmacopœia; adoption of a four year minimum course in pharmacy; formulation of standard recipes of the various unofficial pharmaceutical preparations; and to protect the interest of every Filipino pharmacist.

In 1921 the Association held its first convention in Manila, from 30 January to 3 February. In September, 1928, the Association began publication of a Journal which was primarily devoted to the defense and advancement of the interests of the profession in the Islands.

This Association continued its activities until the Japanese occupation in 1941. Since the American liberation in 1945, there have been many efforts made to reorganize the Association and before many more months pass, pharmacy will again have a representative organization in the Philippines.

In 1926 a bill was entered in the House of Representatives, authorizing the creation of a committee to consist of two physicians, one dentist, two pharmacists and two chemists to take charge of the compilation of the Philippine Pharmacopœia and National Formulary

of the Philippines. The bill failed to pass the last session of the House, however.

Since that time various propositions have been made for: an addendum to the U. S. Pharmacopœia to serve as the precursor of the Philippine Pharmacopœia; publication of a book of recipes similar to the Pharmaceutical Recipe Book; creation of a Philippine Pharmacopœial Research Section in the Bureau of Science to undertake the necessary pharmacological, pharmacognostical and phytochemical investigations for the publication of the pharmacopœia. All of these propositions were embodied in the activities of the National Research Council, whose activities were temporarily halted by the war.

I should not forget the observation of Pharmacy Week in the Islands. In 1933, because the date of observance in the United States coincides with the semester examination of students in Manila, it was transferred to the first week in December. Since then the celebration of Pharmacy Week has always been a huge success.

Hospital Pharmacy

I had the privilege of inspecting the Pharmacy Department of San Lazaro Hospital in Manila. Two pharmacists (female) and three male assistants comprised the staff. This Department filled between 150 and 200 prescriptions daily besides manufacturing sterile solutions and all its galenical preparations.

During the Japanese occupation this Department continued to function as the Japs insured it an adequate supply of drugs. They even distributed many confiscated American proprietaries, most of which were never used—the hospital physicians never prescribed them.

With the American liberation, the Army issued monthly allotments of sterile solutions, drugs and chemicals to this Department. The volume of sterile solutions was woefully inadequate and the pharmacists found it necessary to manufacture their own sterile solutions to supplement the Army allocation.

Borrowing a phrase from the Army, "if you don't have the equipment, improvise," the pharmacists reused the original containers and rubber stoppers from the Army supplies of sterile solutions.

Since there was no available supply of distilled water, a system was devised to collect rain water. Thus rain water was used to

prepare intravenous solutions, and tap water was used in solutions for hypodermoclysis. All solutions were filtered through cotton until free of linters and sterilized in a pressure cooker, using standard technics.

In the preparation of glucose solutions (5 and 10 per cent in NSS) the pharmacists were of necessity required to use refined sucrose and invert it by the use of hydrochloric acid. Sterile solutions were prepared three times weekly, about twenty-five to thirty liters of them being used daily.

I was thoroughly impressed with the neatness, cleanliness and professional atmosphere of this Department as well as with the initiative and resourcefulness of its pharmacists.

Conclusion

I should like to include a quotation from "History of Pharmacy in the Philippines."[1] "With the adoption of the new curriculum from three years to four years, the profession is getting completely feminized. . . . The male students no longer use the college of pharmacy as (a) stepping stone to medicine. However, the female students always consider pharmacy as a dignified profession for them, (so) that there will be a time when the lady pharmacists will completely dominate the pharmaceutical fields."

It is interesting to note the following trends of Pharmacy in the Philippines: in the Philippines, Pharmacy has been accepted as more desirable than pre-med as preparation for the study of medicine; there were probably ten times as many women pharmacists as men, in direct contrast with the states; standards for pharmaceutical practice closely approximate, if not equal, those in the states.

I wish to express my sincere thanks to the following pharmacists who so liberally helped me in the preparation of this article:

Encarnacion S. Zapanta, University of Santo Tomas, 1941, 1111 Magdalena, Manila, P. I.—Lexal Pure Drug Laboratory.

Dr. Apolonio Chaves, Sr., 90 Park Avenue, Pasay, Manila, P. I. —Professor, Manila College of Pharmacy.

Leonila Atienza, University of Santo Tomas, 1939, 230 Rosario Street, Manila, P. I.—Pharmacia Continentale.

Honorata R. Pascual, 1200 G. Tuazon, Sampoloc, Manila, P. I. —Pharmacia Shanghai.

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Gameliel Gonzalez, 1628 Rizal Avenue, Manila, P. I.

Apolonio Chaves, Jr., 90 Park Avenue, Pasay, Manila, P. I. Both second year students at Manila College of Pharmacy.

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HYDROPHILIC OINTMENT *

By Louis C. Zopf **

VEHICLES for the topical application of medicinal substances vary from liquid and powdered preparations to the early and extensively used goose grease and lard. The more recent and universal use of solid petrolatum per se and combined with other oleaginous and waxy substances has to a certain extent been replaced by the newer emulsified washable creams or bases.

This does not necessarily indicate total abolition of the older type ointments but is indicative of advanced study in the field of pharmaceutical research for more effective forms of medication. The application of ointments on abraded or diseased areas of the skin has for its chief purpose the release of a medicinal substance to that area. That the availability of the therapeutic agent is greater in the new type bases than in the entirely oleaginous or petrolatum bases has been repeatedly proved by both clinical and laboratory evaluation.

The Thirteenth Revision of the United States Pharmacopœia will include an ointment vehicle of this newer type under the title Hydrophilic Ointment. The formula, a hydrous emulsified and "washable" (easily removable with water) base, has been accepted, after careful consideration of many combinations suggested in the literature and after a series of laboratory and clinical investigations at the University of Iowa, College of Pharmacy and the University of Iowa Hospitals and elsewhere. The formula proposed for inclusion in the U. S. P. XIII is as follows:

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* This article by Dr. Zopf was distributed by the Revision Committee of the United States Pharmacopœia.

** Professor of Pharmacy, State University of Iowa, College of Pharmacy, and member of the U. S. P. Revision Committee and the Subcommittee on Ointments.

Hydrophilic Ointment

Stearyl Alcohol	250 Gm.
White Petrolatum	250 Gm.
Glycerin	120 Gm.
Sodium Lauryl Sulfate	10 Gm.
Methyl Parahydroxybenzoate	0.25 Gm.
Propyl Parahydroxybenzoate	0.15 Gm.
Distilled Water	369 Gm.
To make about	1000 Gm.

Melt the stearyl alcohol and white petrolatum on a water bath and warm to 75°. Dissolve the sodium lauryl sulfate and methyl parahydroxybenzoate in the glycerin and water, warm to 75°, and add this solution, with stirring, to the warm stearyl alcohol and white petrolatum. Stir the Ointment until congealed.

Other formulas of similar composition may also prove efficacious as ointment bases, but the above formula has been selected because it contains a minimum number of ingredients, is relatively inexpensive to compound and possesses the factor of simplicity of manufacture. While mechanical agitation is suggested, the base can, in small quantities, be readily prepared by manual stirring. The molden mixture thickens between 45° and 50°C. indicating good stability. The base has good consistency and spreads easily upon application. Ointments prepared from it when applied to the skin are all easily removed with water. Removal of stains on bed linens resulting from ointments prepared with this type of base are more readily removed than those containing a high oil phase.

Our studies have revealed that, in formulas based upon combinations similar to that in Hydrophilic Ointment, those containing 36 to 40 per cent of water present a greater stability to heat tests than those of a larger percentage. This amount of water is sufficient to produce an oil-in-water emulsion which possesses pharmaceutical elegance.

Our studies have demonstrated the advisability of including a petrolatum phase, first for its softening effect upon the residual film of ointment as applied to the skin, second for the smoothness and "slip" which it adds to the finished product, and last but of equal

importance many dermatologists are of the opinion that all ointments should contain some petrolatum. That the amount of petrolatum contained in Hydrophilic Ointment does not interfere with the release of medicinal agents was proved through the tests by the Agar Plate Method. Using *Staphylococcus aureus* as the test organism, a Phenol Ointment prepared with this hydrophilic base exhibited a zone of inhibition of 6 to 7 mm. Another test to determine the bacteriostatic properties of ointments prepared with this base was made by the same method using penicillin sodium, 1,000 units per gram. Tested when freshly prepared, Penicillin Ointment produced a zone of inhibition of 26 to 27 mm.

The base was also tried in the preparation of the following ointments:

Medication	*Per Cent*
Ammoniated Mercury	5
Ammoniated Mercury 5 per cent and Salicylic Acid	2½
Belladonna	10
Boric Acid	10
Chrysarobin	6
Ethyl Aminobenzoate	5
Ichthammol	10
Penicillin Sodium	1 M units per Gm.
Phenol	2
Sulfur	15
Tannic Acid	20
Whitfield's combination	½ strength
Zinc Oxide	20

All ointments were of good consistency, spread well, and after application to the skin, all could readily be removed with the aid of water.

It is recommended that Hydrophilic Ointment, like other water-containing creams, be freshly prepared by the pharmacist or stocked only in such quantities as can be used in a reasonable length of time. Containers with tight closures should be utilized for prescriptions employing Hydrophilic Ointment as a base. Tubes are especially recommended.

Hydrophilic Ointment is not recommended as a base for ophthalmic ointments bacause it may prove irritating to mucous membranes. Dr. Herbert O. Calvery, of the Food and Drug Administration, reporting on this ointment in Bulletin 23, of the U. S. P. Subcommittee on Ointments, page 50, states that there is no record of sensitization from any of the ingredients contained in this base and that they have a sufficiently low systemic toxicity so that this is not a problem.

Clinical use of penicillin ointment made from this base, in the University of Iowa Hospitals and the Department of Student Health, has to date failed to reveal any irritating properties or contact dermatitis. Use of this base as a vehicle for application of medicinal substances to the scalp has likewise proved effective and without reaction toward the base. Whitfield's combination, reduced to half strength, when used in intertrigenous areas, has been found to be very effective. It is suggested that in cases where salicylic acid and/or benzoic acid are indicated that the concentration could still be reduced further. Clinical results are not complete and have not progressed sufficiently far to make definite commitment on this point.

Hydrophilic Ointment should furnish the pharmacists and physicians with a vehicle which can be used with the majority of substances most frequently prescribed for external application. It is a product which will supply the pharmacist with a base capable of answering the call for an emulsified, washable, or hydrophilic base.

Editor's Note:

In addition to Hydrophilic Ointment as given above, the Pharmacopœia is considering the recognition of Hydrophilic Petrolatum, the formula for which is as follows:

Hydrophilic Petrolatum

Cholesterol	10 Gm.
Stearyl Alcohol	30 Gm.
White Wax	80 Gm.
Wool Fat (anhydrous)	150 Gm.
White Petrolatum	730 Gm.
To make	1000 Gm.

Melt the ingredients together on a water bath, mix thoroughly, remove from the water bath, and stir until the mixture congeals.

HOUSE ORGANS AS IMPORTANT SOURCES OF INFORMATION

By Kenneth Avis, B. Sc.

HOUSE organs are familiar to those in the medical professions as publications prepared and distributed by manufacturers for the purpose of improving the relations between themselves and those receiving their journals. The recipients are the pharmacists who are potential dispensers and the physicians and dentists who are the potential prescribers of the products of the manufacturer. The improvement of relations between the manufacturer and the pharmacist or physician is accomplished by providing him current information in a condensed form applicable to his limited time for reading. Of course, a portion of the journal is also devoted to presenting information and advertising copy related to that particular manufacturer's products, the returns from which, together with the good will created, justifies the cost of publication and distribution.

The classification of house organs for the purpose of this review cannot be a hard and fast one because the types of information contained in the various publications overlap. However, the most obvious division would come between those publications intended for pharmacists and those intended for physicians with the appropriate types of information contained in each. Under these two main divisions an attempt will be made to treat first the more scientific or professional publications and then those of a less scientific or professional character.

It will be noted during the course of this review that the title of the publication is often a decided clue as to the type or the treatment of information contained therein. This is most often seen in the scientific or professional organs where effort is made to maintain a high intellectual level. It will be noted too that the up-to-the-minute information contained in most of these journals is often not readily available from other sources and thus they are important means of keeping abreast of developments in the medical field.

A decided over-all trend is readily noticeable as these various publications are considered, namely, the maintenance of a much lower scientific and intellectual level among those publications pre-

pared for pharmacists than among those prepared for physicians. This is an unfortunate condition, for pharmacy and medicine should be companion and parallel professions each in its respective field. A question might be asked, however, with considerable justification—whether the general attitude of pharmacists toward their profession has not brought about such a condition.

The first house organ to be considered holds a unique position in that it is a scientific publication intended for distribution to *both* pharmacists and physicians. The editorial attitude is to treat both professions upon an equal level and pharmaceutical and medical articles appear side by side. This attitude makes this house organ an exception among the house organs of American pharmacy and medicine, but a commendable exception, for it has taken the cohesive position exemplifying the attitude which should prevail between these two companion professions. This publication is the "Merck Report" of Merck and Company, Inc., probably the oldest journal of its type in this country and now in its fifty-fourth volume. The information presented in this journal is scientific and professional, but a mention of some of the contents from a typical issue will give an insight of what may be expected to be found: "Streptomycin: Promising Antibiotic Agent," "Contributions of Dentistry to World War II," "Essential Phases of Venereal Disease Control," "pH and Buffered Solutions," "New FDA Label Requirements," etc. The abundant use of photographs to illustrate articles is informative as well as clarifying. Advertising inserts regarding Merck products are neat and they are so arranged that they do not clutter the feature pages.

Another publication distributed to both pharmacists and physicians is a four page paper entitled "Patchwork," published by E. L. Patch Co. "It is published to promote closer relations between Physicians, Hospitals, Druggists and the E. L. Patch Co." It is certainly not scientific for it contains news items entirely unrelated to science, jokes, advertisements and "Patchworkings" which are layman-style dissertations on Patch products.

A house organ in a class of its own is "Pharmacy and Medicine in Review" published by Hoffman-LaRoche and Roche-Organon. This is "an informal review of pharmacy and medicine for professional pharmacists." It was in its fifth volume of publication in June, 1945, when it was temporarily discontinued due to wartime restrictions. There were no illustrations in this four-page paper but

the pages were laid out in a neat professional manner. In addition to the feature article there were three sections: "Pharmacy," with "little hints and suggestions which will prove of value in increasing the professional prestige and the profits of your prescription department," "Medicine," with "brief reviews of latest developments in medical science which supply the necessary information for you to answer physicians' questions intelligently," and "Detailing," with "thumbnail promotional ideas which will aid in widening the circle of your customers and physicians and result in more profit to you." These quotations from the paper will serve to indicate the type of information that it contained.

The next house organ is almost sure to bring a smile to the lips of every pharmacist as he starts to examine it, for the cover design features a human interest incident relative to the drug store. This journal is "Tile and Till" of Eli Lilly and Company which is now in its thirty-first volume. Although many of the articles contained within its pages are scientific, the whole is prepared on a somewhat lower intellectual and professional level than is Lilly's "Physician's Bulletin" which will be discussed later. An appraisal of the kind of information presented within the pages of this publication will be obtained by a perusal of the titles of articles and sections. The following is a partial list of the contents from a recent issue of "Tile and Till": "Pharmaceuticals Mentioned in the Bible," "Milestones in Vitamin Therapy," "The C. Elbert Hoffman Apothecary," "What Your Physicians Are Reading" (medical abstracts), and "The Quest for Blood Substitutes." The advertisements of Lilly products are mostly grouped at the front and back of the publication. Color and photographs are used to add interest and clarity to the articles but an occasional trend toward the sensational can be noticed in the page layouts and illustrations.

The second house organ to be considered among those prepared especially for pharmacists is "Modern Pharmacy" by Parke, Davis and Company. Although not scientific in nature this booklet does present pertinent information about new preparations but it is written in an almost juvenile style. A factor of importance is its over-all theme of trying to stimulate pharmacists to be more professional, with articles of such a nature and usually a pictorial section describing some professional pharmacy in the country. The section "Medicamenta Vera" is informative in that it supplies package information

of products that are being brought to the attention of the physicians at that time. Another helpful section is "Prescription Pointers" with suggestions sent in by pharmacists that have been of value to them in their work.

The "What's New" edition for pharmacists published by Abbott Laboratories is definitely sensational from cover to cover in designs, illustrations and page layouts. In the opinion of this writer it is attuned to the intellectual level of a twelve-year-old at most. A sample of contents is as follows: "News of the New" (concerning Abbott products), two or so brief "layman-style" articles, pictures and descriptions of several prescription departments in this country, "News from the Therapeutic Front" (brief elementary generalities), and "Cross-counter Chat," a humor section. Apparently no attempt is made to carry a volume number but each issue is dated.

There are probably several publications being distributed to agency pharmacists throughout the country such as "Rexall Ad-Vantages" of the United Drug Company. They are definitely not scientific but concern themselves with public news, merchandising and advertisements of the agency products. "Druco News," published by the Philadelphia Wholesale Drug Company, is a similar but much smaller booklet.

The first specifically physicians' house organ to be reviewed is Lilly's "Physician's Bulletin." It is a very neat, plain, professional publication of a high intellectual standard now in its tenth volume. The contents consist of several full length articles with long lists of references at the end of each, a section on new developments in clinical laboratory technics, a section of questions sent in by physicians with comments by the editors, and a section of abstracts. The advertisements are rather in the form of messages to the physicians and from cover to cover the atmosphere is respectfully professional.

Another house organ very similar to the one just considered is the "Bulletin of Lederle Laboratories." It too is prepared with a high intellectual and professional standard from cover to cover. The major portion of the contents is taken up by full length articles with references listed. The remaining portion of the contents is the cover advertisements and an occasional insert and a list of Lederle products at the back of the bulletin.

The "Roche Review" published by Hoffman-LaRoche and LaRoche-Organon "brings to the members of the medical profession

authentic information in quickly assimilable form, concerning therapeutic progress and the application of Roche preparations." Long lists of references at the end of articles strike the eye of the reader of this publication, but this is to be expected for it is a review and thus a given medical subject is reviewed from many sources of information. Of such a nature are the general articles and the articles in the endocrine section. Articles upon the subject of endocrines play a leading part in this journal because of the interest of Roche in them as exemplified by their number of endocrine products. Then there is a section of abstracts from current literature and a humor section "Leaves from a Doctor's Diary." This journal is in its tenth volume.

A "monthly medical journal" entitled "Therapeutic Notes" is published by Parke, Davis and Company. This journal has been in publication since 1894 and is probably the second oldest of these house organs, the "Merck Report" being the oldest. "Therapeutic Notes" contains several full length reviews of given medical subjects followed by a section of detailed abstracts of current literature under the title "Therapeutic Review." The other two sections of the journal indicate the contents from the titles: "Ten Second Abstracts" and "Package Information" (of Parke, Davis & Co. products).

"Clinical Excerpts" is a publication of the Winthrop Chemical Company and is now in its nineteenth volume. It too is professional and scientific in nature with the entire contents devoted to lengthy reviews of medical literature. Some of the reviews are from one specific more lengthy article in current literature and others are upon a given subject with several literature references.

The "C. S. C. Reporter" of the Pharmaceutical Division of Commercial Solvents Corporation is somewhat different from the previous house organs in that it is concerned only with penicillin. The purpose of the "Reporter" is quoted: "It is the earnest desire of Commercial Solvents Corporation to present comprehensive abstracts of the world literature on Penicillin as promptly as possible and as completely." The abstracts are grouped according to therapy or medical class such as: endocarditis, allergy, pharmacology, venereal diseases, etc., and constitute the body of the booklet. It is only in its second volume.

"Penicillin Digest" is the house organ of Cheplin Laboratories and is very similar to the "CSC Reporter" except that the abstracts are very brief, for, aside from the author, title and source there is but a sentence or two concerning the substance of the abstracted article. Obviously the purpose of the "Digest" is not to give a great deal of information about penicillin but is designed to give a sort of index to articles on penicillin appearing in current literature. The abstracts are listed by author and grouped by type of information, i. e., clinical use, pharmacological studies, bacteriological studies, etc. This publication is in but its first volume.

The "McNeil-O-Gram" published by McNeil Laboratories was a four-page leaflet in its nineteenth volume when temporarily discontinued early in 1945. Its own theme will describe the type of information contained within the neatly professional pages: "Abstracts of therapeutic articles in current medical and pharmaceutical literature prepared to conserve the time of the busy physician."

The next house organ is scientific but of a different nature than those so far considered. The "Ciba Symposia" of Ciba Pharmaceutical Products, Inc., is "published solely for the interest of the medical profession." It is true to its title, for symposium by definition is a collection of opinions on a subject, and that is what this publication is. Each issue is devoted to one subject, i. e., "Experimental Self-analysis," "Malaria," etc., with several lengthy articles by different authors relative to the particular subject. Quite often the subject chosen is of a historical nature and thus it becomes a source of information for this often rather hard-to-find material. The design on the cover is appropriate for the issue content. Advertisements of Ciba products appear on the front and back covers. It is now in its seventh volume.

The Sharp and Dohme "Seminar," now in its seventh volume, is the next scientific journal for consideration. The cover designs vary from surrealism to photographic studies. Advertisements of S. & D. products are found sometimes interspersed with the subject matter as well as at the front and back of the issue. There are several parts to the reading material, namely, lengthy medical articles, a section "Clinical Conference" giving the observations upon a case expressed in conference discussion form by a number of physicians, "Clinical Notes" giving clinical observations on cases and with very fine colored plates to illustrate points of diagnosis, etc., "Clinical

Laboratory Section" giving detailed laboratory procedures with illustrations of technique and reactions, and then finally a section of "Abstracts of Literature." The illustrative diagrams and pictures often found in the "Seminar" are fine reproductions and excellent sources of information in themselves.

The next publication makes use of beautiful photographic studies for its cover pieces but they usually have no direct connection with the contents or medical subjects. The main portion of the contents of this journal, the "Squibb Memoranda," is devoted to articles of a therapeutic nature, such as "Penicillin in Medical Practice," "Thyroid—Medicine or Surgery?," and "Motion and Secretion of Motor End Plates." E. R. Squibb and Sons who publish this journal, now in its twenty-fourth volume, make use of photographs and illustrations and some use of color and sensational designs.

The "Scope" published by the Upjohn Company is apparently a relative newcomer in the field for the tenth quarterly issue appeared in April, 1945. The cover and advertisements in particular are sensational in design with the weird "modern" splashes of color and figures. However, the articles are scientific and professional as shown by the sample title "The Differential Diagnosis of Jaundice." The articles are also well illustrated with colored or black and white diagrams, plates and pictures.

The physicians' edition of "What's New" by Abbott Laboratories is distinctly different from the pharmacists' edition. The contents are presented on a decidedly higher intellectual level than that of the latter edition. The articles and reviews are of a medical nature and prepared on a level befitting the profession. There is also a large section of brief summaries and abstracts laid out in file card size, which may be obtained from the company reproduced on file cards and ready for filing. A final section in this physicians' edition, "News of the New," is concerned with news of Abbott products. This edition is also somewhat sensational but not to the extent found in the pharmacists' edition. In both editions, however, there is usually reproduced a number of large paintings having little or no scientific application or bearing. The editors alone can explain this latter use of space which this writer feels is hardly justified.

The final house organ to be considered in this review is in a class of its own for it deals only with medical research. It is "Research Today" published by the Lilly Research Laboratories, and

now in its second volume. This journal presents articles such as "Antibiotics" and "Biochemistry of Penicillin and Other Antibiotics" in a scientific style. Photographs and illustrations are used but there is no standard advertising within the pages other than the mention of the Lilly name from time to time.

Although this is not a discussion of the art of publication and advertising it is the opinion of the writer that those house organs which resort to the use of the sensational in page layouts and designs distinctly lower their scientific and professional appeal. It is also considered unfortunate that the approach to a given subject is not on a higher level in those publications going to pharmacists. Under present conditions the pharmacist interested in scientific articles is in most instances almost forced to read house organs prepared for physicians. This is definitely not in accord with the greatly improved conditions in pharmaceutical education. It is also quite likely that the low standard set by certain house organs adds still further to that regrettable complacency so often observed amongst pharmacists in their scientific and professional backwardness. It is not to be expected that such reading, therefore, will provide any stimulus to further reading and progress which is so sorely needed.

For the convenience of the reader an alphabetical list of the house organs reviewed in this paper is appended with the name and address of the pharmaceutical house publishing it. Although this list is not intended to be comprehensive, it is believed that all of the more prominent house organs in American Pharmacy and Medicine have been mentioned.

House Organs	*Company and Address*
Bulletin of Lederle Laboratories	Lederle Laboratories, Inc. New York, N. Y.
Ciba Symposia	Ciba Pharmaceutical Products, Inc. Lafayette Park, Summit, N. J.
Clinical Excerpts	Winthrop Chemical Company, Inc. 170 Varick St., New York, N. Y.
CSC Reporter	Commercial Solvents Corporation, Pharmaceutical Division 17 E. 42nd St., New York, N. Y.
Druco News	Philadelphia Wholesale Drug Co. 10th and Spring Garden Sts., Philadelphia, Pa.

Merck Report, The	Merck and Company, Inc. Rahway, N. J.
McNeil-O-Gram	McNeil Laboratories, Inc. 2900 N. 17th St., Philadelphia, Pa.
Modern Pharmacy	Parke, Davis and Company Detroit 32, Mich.
Patchwork	E. L. Patch Company Boston, Mass.
Penicillin Digest	Cheplin Laboratories, Inc. Syracuse 1, N. Y.
Pharmacy and Medicine in Review	Hoffman-LaRoche, Inc., and LaRoche-Organon, Inc. Nutley 10, N. J.
Physician's Bulletin	Eli Lilly and Company Indianapolis 6, Ind.
Research Today	The Lilly Research Laboratories Eli Lilly and Company Indianapolis 6, Ind.
Rexall Ad-Vantages	United-Rexall Drug Company Boston, Mass.
Roche Review	Hoffman-LaRoche, Inc., and Roche-Organon, Inc. Nutley 10, N. J.
Scope	The Upjohn Company Kalamazoo, Mich.
Seminar	Sharp and Dohme, Inc. Philadelphia, Pa.
Squibb Memoranda	E. R. Squibb and Sons 745 Fifth Avenue, New York, N. Y.
Therapeutic Notes	Parke, Davis and Company Detroit 32, Mich.
Tile and Till	Eli Lilly and Company Indianapolis 6, Ind.
What's New (Pharmacists' and Physicians' Editions)	Abbott Laboratories North Chicago, Ill.

A NOTE ON THE PLACEBO *

By O. H. Perry Pepper, M. D.**

IT IS interesting that apparently there has never been a paper published discussing the important subject of the placebo. This is evidenced by the absence of this topic from the Index of the Surgeon General's Library and from the Cumulative Index. No doubt this valuable item of our therapeutic armamentarium is mentioned repeatedly in articles under other headings but it deserves at least one reference all its own. Every one of us has often used the word and often prescribed the placebo, yet how many of us realize how little has been written and how little is known of the history of this word and this type of treatment. It receives not one mention in La Wall's delightful "Four Thousand Years of Pharmacy."

The word itself, of course, is the first person singular of the future indicative of the Latin verb "to please," so it would seem to be an excellent name for a drug given for its psychotherapeutic effect and having no pharmacologic action whatever. Let us now look the word up in the Oxford "New English Dictionary"—as so often happens we find more than we knew.

The first use given for the word placebo is as the name commonly given to Vespers in the Office for the Dead in the Latin service. This use dates back at least to the 13th century and in 1380 Wyclif writes "Prelatis ben more bounden to this prechynge . . . than to seie matynes, masse, evensong or placebo." At this service in the Roman Church a part of the CXVI Psalm is recited in Latin—"Placebo Domino in regione vivorum" which it would seem should be translated "I will please the Lord in the land of the living" but which in both English prayer book and King James Version reads "I will walk before the Lord in the land of the living." This variation stems back to the use of the Hebrew verb "halak" (pronounced hawloch) which means "to walk habitually" and occurs constantly in such phrases as "he walked before God," hence was pleasing to

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God. Our little research has led us deep into ecclesiastical matters.

Continuing in the dictionary we find the second use of placebo to be in allusive phrases such as "to sing a placebo" or "to be at the school of placebo" meaning to play the sycophant or to be servile. This also is an old use of the word, for in Chaucer we find the sentence "Flatereres been the deueles Chapelleyns that syngen euere Placebo." Number three of the uses of the word finds it a noun meaning a flatterer, sycophant or parasite and again in Chaucer a character of this type is given Placebo as a proper name.

It is not until heading number four, that we came to its use as "an epithet given to any medicine adopted more to please than to benefit the patient." This is quoted from Hooper's Medical Dictionary which is the earliest use of the word in this way recorded in the big Oxford New English Dictionary which always records a word's first known use in literature. This edition of Hooper's Dictionary was not published until 1811, at least five hundred years after the word was used in other manners. It is interesting to speculate on this tardy appearance of placebo in medical terminology and to search further. One might expect to find this use far earlier. At first thought, one might anticipate it to be very old and probably the use of medicines in this fashion is as old as medicine itself; but remember that in olden days the physician had no method of distinguishing the drugs which had true actions from those wholly inert. All were considered powerful, none truly were; it would have been iconoclastic to doubt any. So perhaps in the times before the Countess of Chinchon in 1638 there was no basis for terming anything a placebo. This supposition is supported by finding the word in the 1787 edition of Quincy's Lexicon defined as "a commonplace method of medicine" which in one sense is only too true. With this same definition it also appears in the Philadelphia Medical Dictionary published in 1808 by John Redman Coxe.

This wise definition—a commonplace method of medicine—may illustrate the earliest stage of doubt concerning the efficacy of the weird prescriptions of those days and an approach to the frank admission of a quarter of a century later that one might wish to give a placebo—to please without benefit.

In the 19th and beginning of the 20th centuries the placebo was freely prescribed and the word was in daily use. Nevertheless it is amazing not to find the word placebo in the index of H. C. Wood's

famous Therapeutics whose fourteen editions covered the period from 1875 to 1908. If Wood was unwilling to discuss placeboes it is not surprising to find that the modern books on treatment—Barr, Beckman, Clendening—turn up their more scientific noses at this humble humbug. The giving of a placebo—when, how, what—seems to be a function of the physician which, like certain of the functions of the body, is not to be mentioned in polite society. Yet there is a certain amount of skill in the choice and administration of a placebo. In the first place, it must be nothing more than what the name implies—a medicine without any pharmacologic action whatever. Even a mild sedative is not a true placebo. Secondly, its name must be unknown to even the most inveterate patient who knows most drugs by name and is always quick to read the prescription. If the medicines named are familiar the type of patient who needs a placebo will promptly exclaim that this or that drug had been tried and "had not helped me" or "had upset my stomach." It is well if the drug have a Latin and polysyllabic name; it is wise if it be prescribed with some assurance and emphasis for psychotherapeutic effect. The older physicians each had his favorite placeboic prescriptions—one chose Tincture of Condurango, another the Fluidextract of Cimicifuga nigra. Certainly this latter by its Latin name might be expected to have more supratentorial action than if one merely wrote for the Black Cohosh, and Condurango would be more efficacious than sugar of milk.

But is there any need or excuse for ever giving a placebo? What, in other words, are the indications? Often the physician is forced to prescribe some medicine for a patient before any diagnosis has been reached. This is especially true when the patient is ignorant and does not understand that diagnosis must precede intelligent treatment. Sometimes there is no indication even for symptomatic treatment and yet the patient will be disappointed and displeased if no prescription is given even at the very first visit. Again, there may be a time when during the carrying out of diagnostic tests it is undesirable to give any potent medicine lest it interfere with the tests and yet the patient must be encouraged by treatment. None of this perhaps is necessary if the patient and family are sufficiently intelligent—but unfortunately few are.

In the hopeless, incurable case the use of a placebo will often postpone the use of sedatives or will lessen the quantity that must

be given even if there is pain. The human mind is still open to suggestion, even in these modern and disillusioned days. The sympathetic physician will want to use every help for these pathetic patients and if the placebo can help, he will not neglect it. It cannot harm and may comfort and avoid the too quick exhaustion of opiate efficacy. The placebo is part of what used to be called the art of medicine—that discredited sister of scientific medicine. There is still a good deal to be said for the art of medicine and always will be and when our final illness comes let us hope that before the Placebo is pronounced over our remains we shall have been under the care of a physician not too scientific and yet not a placebo, who will not hesitate to smooth our path even by the use of a well prescribed placebo.

The Mount Palomar Telescope

After a wartime interruption, construction of the world's largest telescope (200 inches) at the summit of Mount Palomar in California is being resumed, according to an announcement made by the Carnegie Institution of Washington.

The 200-inch disc was poured on December 2, 1934, at Corning, N. Y., and was later shipped by rail to the observatory. The outbreak of war halted both the optical and mechanical work.

A cooperative research program is planned for the observatories on Mount Wilson and Mount Palomar, as soon as the equipment at the latter is completed.

[*Science*, *102*, 441 (1945).]

SELECTED ABSTRACTS

Treatment of Granuloma Inguinale with Diramin. R. B. Greenblatt, A. V. Deibert, S. Fisher and W. J. Clough. *J. Venereal Disease Information 26,* 238 (1945). Diramin is an aqueous solution of the product resulting from the reaction between antimony catechol and triisopropanolamine in the presence of propylene glycol, and contains 8.5 mg. of antimony per cc.

The drug was administered intravenously in 2 cc. doses two to five times weekly to a group of fourteen patients with granuloma inguinale. The results observed ranged from slight improvement to complete healing of the lesions; the regression of early small lesions was noted after from four to seven injections. It was found that if the drug is administered intramuscularly, pain and local irritation are experienced by the patient.

In order to compare the relative response of the lesions to fuadin and diramin, the former drug was administered in 5 cc. doses to fifteen other patients, either before or after a course of diramin therapy (2 cc. doses). It appeared that fuadin was more effective than diramin, but it is suggested that the variation in response may have been due to the different dosage levels, since 1 cc. of each preparation contains approximately equal amounts of antimony.

No benefit was observed from the administration of penicillin to several patients with granuloma inguinale. The dosage given was from 10,000 to 20,000 units every three hours for totals varying from one to two million units over periods of from ten to twenty days.

Aerosol Penicillin in General Practice. H. N. Vermilye. *J. A. M. A. 129,* 250 (1945). Either sodium or calcium penicillin, dissolved in sterile isotonic solution of sodium chloride, was administered as an aerosol to more than 200 patients for the successful treatment of the following conditions: acute and relapsing pneumonitis due to various cocci; tonsillitis, sinusitis and sinobronchitis; pharyngitis with gastrointestinal manifestations; and intrinsic bacterial asthma. Several other manifestations of bacterial allergy asso-

ciated with upper respiratory infections were treated with encouraging results.

The usual adult dose was 25,000 units in 1 cc. of solution. After the penicillin solution was nebulized, 0.5 cc. of isotonic solution of sodium chloride was also administered. In the treatment of sinusitis, nose drops containing neosynephrin or privine were used before the penicillin aerosol was given; in asthma or other conditions causing bronchospasm, 0.5 cc. of 0.25 per cent neosynephrin was first administered as an aerosol so that penicillin could be brought into contact with the desired areas.

The concentration of penicillin in the blood was found to be from 0.02 to 0.05 unit one-half to one hour after inhalation. It is stated that any desired blood level of the drug may be obtained by the aerosol method if more frequent intermittent inhalation, or continuous inhalation through an oxygen mask, is employed. Advantages claimed for this technic over parenteral administration, especially for the treatment of respiratory conditions, are ease and adaptability of administration in the home or office through a mouthpiece or oxygen mask, relative cheapness and local and systemic effectiveness.

In two patients a previously unreported side effect of penicillin was observed. The administration of a penicillin aerosol either simultaneously with, or within a few hours after, a pollen immunization or vaccine resulted in severe allergic reactions; these were controlled within a few minutes by 50 mg. of isonipecaine, either orally or parenterally.

Clinical Use of Dicumarol. N. W. Barker. *M. Clin. North America 29,* 929 (1945); through *U. S. Naval Med. Bull. 45,* 982 (1945). Statistical studies of the clinical use of dicumarol were made on the postoperative course of patients at the Mayo Clinic.

Among 678 patients who survived a pulmonary embolism and who did not receive dicumarol, 297 (43.8 per cent) had one or more subsequent recurrences of thrombophlebitis or pulmonary embolism, and 124 (18.3 per cent) had a fatal embolism. Of 180 similar patients who received dicumarol, 2 (1.1 per cent) had subsequent thrombophlebitis or embolism; only 1 (0.6 per cent) had a fatal embolism.

Of 897 patients who developed postoperative thrombophlebitis (or phlebothrombosis) and who did not receive dicumarol, 95 (10.6 per cent) had a recurrence or extension of the condition, and 51 (5.7 per cent) had a subsequent fatal pulmonary embolism. Among 138 similar patients who received dicumarol, 4 (2.9 per cent) had a recurrence of thrombophlebitis; there was no case of fatal embolism.

Zephiran Hydrochloride in Fungus Infection of the Ear. E. F. Lowry. *U. S. Naval Med. Bull. 45,* 1016 (1945). Fungus infection of the external auditory canal was painlessly and effectively treated by syringing once daily with from 50 to 100 cc. of a 1:5,000 aqueous solution of zephiran hydrochloride. No syringing should be performed if the ear drum is not intact. No cotton plug or other medication was found necessary. It was noted that solutions more concentrated than 1:1,000 caused desquamation in the canal.

The most severe case required six days of treatment; all others, three. It is recommended that as a measure to prevent recurrence of the infection, the treatment should be continued for ten days.

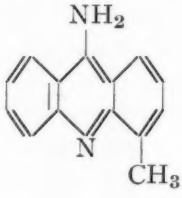
Penicillin Locally in Vincent's Angina. G. C. Manning. *U. S. Naval Med. Bull. 45,* 932 (1945). In a limited number of cases, penicillin lozenges appeared to constitute an improvement over older methods of therapy in the treatment of Vincent's angina.

The lozenges were prepared by adding 90 cc. of tap water to 200 cc. (Gm. ?) of bulk-flavored gelatin dessert powder. The mixture was heated slowly until the powder dissolved, the temperature being kept considerably below the boiling point of water. To this was added a solution of 100,000 Oxford units of penicillin in from 10 to 20 cc. of water, after which the mixture was thoroughly stirred, poured into an ice-cube tray (four inches by ten inches, without partitions) and immediately placed in a refrigerator.

When the product had hardened, it was divided into forty lozenges, each of which was about three-eighths inch thick and contained 2,500 units of penicillin.

The dosage was one lozenge every two hours. From three to five minutes were required for each lozenge to dissolve completely in the mouth.

The Pharmacy of 1-Methyl-5-Aminoacridine Hydrochloride. J. E. Falk and M. Lederer. *Pharm. J. 101,* 208 (1945). Other investigators have reported that 1-methyl-5-aminoacridine hydrochloride, a new non-staining antibacterial, possesses certain advantages over 5-aminoacridine. The studies reported in this paper extend the knowledge of the pharmacy of this substance, the structure of which is as follows:



$.HCl.H_2O$

The monohydrate of the compound is a pale yellow, crystalline, bitter tasting, odorless powder. At 18°C. its solubility in water is 1:220 and 1:380 in absolute alcohol; it is insoluble in ether or benzene. A 1:10,000 solution has a violet-blue fluorescence. The free base melts at 196-197°C. (corr.).

A 1:1,000 aqueous solution has a pH of 6 ± 0.5 and its surface tension is the same as that of water. It is miscible with alcohol or glycerin. No change in the melting point of the free base or the color was produced by autoclaving the solution at 160°C. for one hour or exposing it to light for thirty days.

No incompatibility was observed between a 1:1,000 aqueous solution of 1-methyl-5-aminoacridine hydrochloride and any of the following compounds in the percentage solutions specified: epinephrine hydrochloride, 0.1 per cent; amethocaine hydrochloride ("Decicain"), 5 per cent; zinc sulfate, 1 per cent; ephedrine sulfate, 0.1 per cent; "Zephiran," 1 per cent; acetic acid, 10 per cent; hydrochloric acid, 1 per cent; sodium bicarbonate, 1 per cent. Precipitation occurred when larger amounts of acid, sodium carbonate, other alkalies, sodium benzoate or strong solutions of chlorides were added.

A 1:1,000 solution of 1-methyl-5-aminoacridine hydrochloride was found to be compatible with the following: isotonic solution of sodium bicarbonate (1.3 Gm. per 100 mils); isotonic saline solution; the B. P. C. buffer solution, pH7, containing 0.681 Gm. KH_2PO_4, 0.118 Gm. NaOH, and 0.9 Gm. NaCl per 100 mils; and the buffer solution of Unger and Robinson, containing 0.05 Gm. borax, 1.2 Gm. boric acid and 0.3 Gm. NaCl per 100 mils.

Bacitracin: A New Antibiotic Produced by a Member of the B. subtilis Group. B. A. Johnson, H. Anker and F. L. Meleney. *Science 102,* 376 (1945). A new antibiotic termed "bacitracin" has been recovered from a strain of the *B. subtilis* group of organisms isolated from tissue debrided from a compound fraction of the tibia. The substance is formed when the strain is grown in shallow layers of tryptone broth, beef infusion broth, Savita or Amigen broth or in a synthetic medium. After incubation for three to five days at 37°C., the decanted medium is extracted with *n*-butanol and concentrated by steam distillation *in vacuo.*

"Bacitracin" has not been obtained in the pure form to date. It is a grayish-white, water-soluble, neutral powder, and cannot be precipitated from the original harvest by adjustment of the pH, in which respect it differs from Gramicidin, Gramacidin S and Subtilin. It cannot be extracted by ether, chloroform, acetone or ethyl acetate. It is relatively stable toward heat, stable in acid solution, but unstable above pH9. It does not hemolyze human or sheep's red blood cells in saline suspension.

In vitro tests have shown "bacitracin" to be active chiefly against Gram-positive organisms, but it displayed some activity against the gonococcus and meningococcus.

It was found to have a protective action against experimentally produced hemolytic streptococcal infections in mice and gas gangrene infections in guinea pigs. In a small number of clinical trials on human subjects with hemolytic streptococcal and staphylococcal infections, "bacitracin" administered locally gave results comparable to those observed in similar cases following the local use of penicillin.

Nasal Congestion From Frequent Use of Privine Hydrochloride. S. M. Feinberg and S. Friedlaender. *J. A. M. A. 128,* 1095 (1945). Privine hydrochloride (2-naphthyl-methyl-imidazoline hydrochloride) is marketed in 0.05 and 0.10 per cent isotonic solutions with a pH of 6.2, approximating that of the normal nasal secretion.

The authors have noted that the intranasal administration of privine hydrochloride for the relief of nasal congestion in allergic and

infectious rhinitis commonly results in a secondary congestive action; this is in agreement with the observations of other investigators.

Patients for whom the drug has been prescribed have been found to use it routinely over a period of one or two years, without the advice of a physician, in the belief that the long-continued use is without harm.

It has been found that the discontinuance of such nasal drops results in marked improvement in about one week, although severe nasal obstruction may be experienced during the first two or three days. In such cases a sedative may be required to aid sleep, and ephedrine sulfate orally or intranasally may be given.

The authors suggest several possible explanations for the mechanism of the action of privine. Of these, the one considered most plausible is that the secondary vasodilatation which occurs is a reaction following intense vasoconstriction. The relative pressor potency of privine is from one-fifth to one-third that of epinephrine, while its duration of action is from two to three times that of the latter.

Interesting observations on the vitamin A and D potencies of cod liver oil have been reported recently by Pugsley and his associates at the Laboratory of Hygiene, Department of Pensions and National Health, Canada.

Cod classed as "steaks" (6 to 8 years) yielded an oil higher in vitamin A and D potency than "market cod" (4 to 6 years); the lowest potency was found in the liver oil of "scrod" (3 to 4 years). An increase in the oil content of the liver and of the liver content of the fish was accompanied by a decrease in the concentration of vitamins A and D in the oil.

[*Chem. Engr. News 23*, 1986 (1945).]